

AMENDMENTS TO THE CLAIMS

1. (Presently Amended) An isolated peptide, characterized in that it has polypeptide having the following formula:

X1-X2-X3-X4-X5-X6-X7-X8-X9,

wherein:

- X1 is absent or represents an amino acid selected in the group consisting of non-charged polar amino acids and non-polar amino acids,
- X2 is absent or represents an amino acid selected in the group consisting of acidic amino acids, non-charged polar amino acids and non-polar amino acids,
- X3 is selected in the group consisting of basic amino acids, non-charged polar amino acids and non-polar amino acids,
- X4 is W,
- X5 represents an amino acid selected in the group consisting of A, V, L, I, P, W, M and C,
- X6 is selected in the group consisting of non-polar amino acids,
- X7 is a basic amino acid
- X8 is selected in the group consisting of basic amino acids and non-charged polar amino acids and
- X9 is absent or represents an amino acid selected in the group consisting of basic amino acids and non-polar amino acids.

2. (Presently Amended) The isolated peptide polypeptide according to claim 1, characterized in that it wherein said polypeptide is selected in from the group consisting of the following pro-apoptotic peptides polypeptides:

- peptides polypeptides of 6-9 amino acids wherein X5 = I, L, A;
- peptides polypeptides of 6-9 amino acids, wherein X1 is absent or represents I, V, T,

X2 is absent or represents E, X3 =T, S, R, N, X4 =W, X5 =I, A, X6 =L, V, X7 =R, X8 =H, N, X9 is absent or represents P; and

- peptides polypeptides of 6-9 amino acids, wherein X3 = T, X5= I, X6 =L and X8 = H.

3. (Presently Amended) The isolated peptide polypeptide according to claim 1, characterized in that wherein said polypeptide is selected in from the group consisting of the following pro-apoptotic peptides polypeptides:

- peptides polypeptides of 6-9 amino acids wherein X5 = I, L, A;
- peptides polypeptides of 6-9 amino acids, wherein X1 is absent or represents I, V, T,

X2 is absent or represents E, X3 =T, S, R, N, X4 =W, X5 =I, A, X6 =L, V, X7 =R, X8 =H, N, X9 is absent or represents P; and

- peptides polypeptides of 6-9 amino acids, wherein X3 = T, X5= I, X6 =L and X8 = H, with the proviso that said peptide polypeptide is not the peptide polypeptide having the following sequence: IETWILRHP.

4. (Presently Amended) The isolated peptide polypeptide according to claim 1, characterized in that wherein said peptide polypeptide has the following sequence: IETWILRHP.

5. (Presently Amended) The isolated peptide polypeptide according to any of claims 1 to 4, characterized in that claim 1, wherein said peptide polypeptide is associated with or conjugated to another peptide polypeptide or protein such as a carrier protein or non-peptide molecule and/or incorporated into a suitable support.

6. (Presently Amended) Isolated An isolated and purified polynucleotide, characterized in that it which encodes a peptide polypeptide according to anyone of claims 1 to 4 claim 1.

7. (Presently Amended) Recombinant A recombinant vector, characterized in that it comprises comprising a polynucleotide according to claim 6.

8. (Presently Amended) Recombinant The recombinant vector according to claim 7, characterized in that it further comprises comprising a sequence encoding a secretory pathway targeting protein.

9. (Presently Amended) Recombinant The recombinant vector according to claim 8, characterized in that wherein said sequence encoding a secretory pathway targeting protein is selected in from the group consisting of a sequence encoding an endoplasmic reticulum targeting signal peptide such as a translocation signal peptide and more specifically the prM translocation signal peptide corresponding to fragment 95-114 of the C protein of a flavivirus and more preferably of a dengue (DEN) virus and a membrane-anchoring signal peptide that targets glycoproteins to the plasma membrane, such as the fragment 1-118 of CD72 (cytosolic tail of a type II integral membrane glycoprotein).

10. (Presently Amended) Recombinant The recombinant vector according to claim 7, characterized in that it further comprises comprising comprises a marker.

11. (Presently Amended) Recombinant The recombinant vector according to claim 10, characterized in that wherein said marker gene is the enhanced green fluorescent protein (EGFP).

12. (Presently Amended) Recombinant The recombinant vector according to claims 7 to 11, characterized in that it further comprises claim 7 further comprising appropriate transcriptional and translational control elements.

13. (Presently Amended) Recombinant The recombinant vector according to claim 7 wherein the polynucleotide encodes the peptide polypeptide having the following sequence: IETWILRHP.

14. (Presently Amended) Recombinant The recombinant vector according to claim 13 wherein it said recombinant vector corresponds to plasmid [95-114]EGFP[M32-M40]DEN-2 which has been deposited at the Collection Nationale de Cultures de Microorganismes, 28 Rue de Docteur Roux, F-75724 Paris Cedex 15, on March 29, 2002 under the number I-2829.

15. (Presently Amended) Recombinant The recombinant vector according to claim 13 wherein it said recombinant vector corresponds to plasmid Trip □ U3 CMV [95-114]EGFP[237-245]DEN-2, which has been deposited at the Collection Nationale de Cultures de Microorganismes, 28 Rue de Docteur Roux, F-75724 Paris Cedex 15, on May 23, 2003, under the number I-3032.

16. (Presently Amended) Host A host cell, characterized in that it is transformed by with a recombinant vector according to anyone of claims 7 to 15 claim 7.

17. (Presently Amended) Polyclonal or monoclonal antibodies A polyclonal antibody or monoclonal antibody raised against a peptide of claims 1 to 5 polypeptide of claim 1.

18. (Presently Amended) Pharmaceutical A pharmaceutical composition comprising an effective amount for inducing apoptosis in cancer cells of a pro-apoptotic peptide according to claims 1 to 4 one or more pro-apoptotic polypeptides according to claim 1, the polynucleotide encoding the same according to claim 6 or the recombinant vector according to claims 7 to 15, a targeting substance to the target cells and at least one pharmaceutically acceptable carrier.

19. (Presently Amended) Pharmaceutical The pharmaceutical composition according to claim 18, characterized in that wherein said targeting substance may be any ligand which can bind specifically to the target cells.

20. (Presently Amended) Method A method of screening for molecules capable of modulating apoptosis comprising the steps of:

- introducing the peptide according to claims 1 to 4 one or more polypeptides according to claim 1, a polynucleotide according to claim 6 or a recombinant vector according to claims 7 to 15 into a cell,
- contacting said cell with the molecule to be screened and
- detecting the presence or absence of apoptosis.

21. (Canceled)

22. (Presently Amended) Direct A direct detection method of a flavivirus infection, characterized in that it comprises comprising:

- contacting a biological sample to be analysed or a culture medium supposed to eventually contain flavivirus antigens with antibodies according to claim 17, optionally labelled and,

- a step for detecting the eventually formed antigen-antibody complexes by any means.

23. (Presently Amended) Serological A method of serological detection of a flavivirus infection, characterized in that it comprises comprising:

- contacting a biological sample with a solid support on which peptides according to claims 1 to 4 one or more polypeptides according to claim 1 are bound, and

- a step for detecting the eventually formed antigen-antibody complexes by any means.

24. (New) A pharmaceutical composition comprising an effective amount for inducing apoptosis in cancer cells of one or more polynucleotides according to claim 6, a targeting substance to the target cells and at least one pharmaceutically acceptable carrier.

25. (New) The pharmaceutical composition according to claim 24, wherein said targeting substance may be any ligand which can bind specifically to the target cells.

26. (New) A method of screening for molecules capable of modulating apoptosis comprising:

- introducing one or more polynucleotides according to claim 6 into a cell,  
- contacting said cell with the molecule to be screened and  
- detecting the presence or absence of apoptosis.

27. (New) A pharmaceutical composition comprising an effective amount for inducing apoptosis in cancer cells of a recombinant vector according to claim 7, a targeting substance to the target cells and at least one pharmaceutically acceptable carrier.

28. (New) The pharmaceutical composition according to claim 26, wherein said targeting

substance may be any ligand which can bind specifically to the target cells.

29. (New) A method of screening for molecules capable of modulating apoptosis comprising:

- introducing a recombinant vector according to claim 7 into a cell,
- contacting said cell with the molecule to be screened and
- detecting the presence or absence of apoptosis.